

# An HI survey of the Boötes void. I. The Data

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## Abstract

We present the results of a neutral hydrogen survey of the Boötes void carried out with the VLA <sup>1</sup> (Napier et al. 1983) in D-array. The survey covers  $\sim 1100 \text{ Mpc}^3$ , about 1% of the volume of the void as defined by Kirshner et al. 1987. We observed 24 fields, centered on known void galaxies; 16 of these were detected in HI. Eighteen uncataloged companion galaxies were discovered directly in the HI line at distances of  $45''$  to  $14.5'$  from the target galaxies. We also present the results of follow-up optical imaging observations and discovery of one additional Boötes void galaxy, found through spectroscopy of a number of apparent companions to known void members. Our angular resolution is  $\sim 1'$  ( $45 \text{ kpc}$ ) <sup>2</sup>, each field has a size of  $\sim 1^\circ$  ( $2.7 \text{ Mpc}$ ). The detected HI masses range from  $8 \times 10^8$  to  $1 \times 10^{10} M_\odot$ . Typically our  $2\sigma$  HI column density sensitivity is  $2 \times 10^{19} \text{ cm}^{-2}$ . The radio and optical data are analyzed and discussed in the following companion article (Paper 2, Szomoru, van Gorkom, Gregg and Strauss 1996).

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<sup>2</sup>Throughout this paper, we have assumed  $H_0 = 100 \text{ km s}^{-1} \text{ Mpc}^{-1}$ .